

# DEVICE AND METHOD FOR INITIATING AN EXERCISE ROUTINE

## RELATED APPLICATIONS

5 This application is a continuation-in-part of  
copening U.S. Patent Application No. 09/634,535,  
filed August 08, 200 and entitled Device And Method  
For Initiating An Exercise Routine.

## BACKGROUND OF THE INVENTION

### 1. FIELD OF THE INVENTION

10 In general, the present invention relates to  
hand-held programmable electronic devices that can  
be programmed to remind a person of different events  
15 scheduled at different times. More specifically, the  
present invention device relates to programmable  
electronic devices that are used to help a person  
plan and initiate an exercise routine.

### 2. DESCRIPTION OF THE PRIOR ART

20 The prior art is replete with various  
electronic devices that can be programmed to perform  
various data management tasks. Palm-top computers  
are the most dynamic of such devices. Palm-top

computers are miniature personal computers capable of running a wide range of software. As such, the uses for palm-top computers are only as limited as is the software available for that computer.

5       However, palm-top computers are expensive and therefore are not typically purchased by people who have little use for the software processing capabilities of such devices.

10       Rather, in the field of consumer electronics, there are many electronic devices that run only a single dedicated program. Such devices include electronic calendars, electronic address books, electronic language translators and the like. Such devices are programmed with a single program and do not require a dynamic processor. Consequently, 15 dedicated electronic devices typically are far less expensive than are the more versatile palm-top computers.

20       Among the many dedicated consumer electronic devices that exist are devices directed toward health and exercise. There are many electronic devices that are used to monitor food intake so that a person can keep to a diet. Many times such electronic devices are incorporated into

wristwatches. Still other electronic devices exist that are used to monitor the burning of calories during various types of exercise. Although such prior art electronic devices are useful to people on a diet and people who exercise, such devices do not directly motivate a person to better their health.

A need therefore exists for a dedicated electronic device that is low cost and acts as a virtual gym or a virtual trainer, so as to motivate a person to better their health through a structured program. This need is met by the present invention as it is described and claimed below.

#### **SUMMARY OF THE INVENTION**

The present invention is a virtual trainer device and method for motivating a person to start and maintain an exercise routine. The virtual trainer device is a hand-held electronic device that includes a display. Randomly, throughout each day, the electronic device indicates that exercise should be performed. At those times, a person is prompted to select a type of exercise that is appropriate for the location and circumstances in which that person finds himself/herself at that time. After selecting

the appropriate type of exercises, the selected exercises are portrayed on the display of the device. The virtual trainer device also sets a time frame in which the various exercises are to be completed and motivates a person to perform the exercises within that time frame, as would a trainer or coach. At the end of the time period, the virtual trainer device prompts the user as to whether or not the various exercises were performed in the given time period. A fitness report is then displayed showing improved or declining fitness.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

For a better understanding of the present invention, reference is made to the following description of an exemplary embodiment thereof, considered in conjunction with the accompanying drawings, in which:

FIG. 1 is a front view of an exemplary embodiment of a virtual trainer device in accordance with the present invention;

FIG. 2 is schematic flow diagram of the method

of operation for the virtual trainer device;

FIG. 3 shows two forms of a changing display presented by the virtual trainer device; and

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FIG. 4 is a schematic flow diagram showing secondary features of the virtual trainer device.

#### **DETAILED DESCRIPTION OF THE INVENTION**

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Although the present invention virtual trainer device and method can be used to present an exercise routine in many different specialty disciplines, such as yoga, karate and the like, the present invention is especially suitable for presenting an exercise routine using commonly known callisthenic exercises and everyday activities. Consequently, the first embodiment of the present invention virtual trainer device and method will be described using traditional well known exercises in order to set forth the best embodiment contemplated.

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Referring to Fig. 1, a first embodiment of an electronic virtual trainer device 10 is shown in accordance with the present invention. The virtual trainer device 10 is a hand-held device that is

sized to readily fit into a person's pocket. In  
alternate embodiments, the virtual trainer device 10  
can be formed into a wristwatch or shaped like a  
credit card so that it can be carried in a person's  
5 wallet.

The virtual trainer device 10 has a liquid  
crystal display (LCD) 12. To the side of the display  
12 is a bank of function buttons. The function  
buttons include a "Power" button 14, a "GO" button  
10 16, a "Menu" button 18 and directional buttons 20.  
The virtual trainer device 10 also contains a  
speaker 22. The display 12 enables the virtual  
trainer device 10 to present visual messages, while  
the speaker 22 enables the virtual trainer device 10  
15 to present audible messages.

The purpose of the virtual trainer device 10 is  
to prompt a user to initiate an exercise routine.  
The virtual trainer device 10 provides an indication  
as to when to perform exercises, provides a visual  
20 indication of how to properly perform those  
exercises and provides a fitness update upon the  
completion or non-completion of the exercises.

Referring to Fig. 2, the method of operation of  
the present invention virtual trainer device can be

explained. First the electronic device is turned on using the "POWER" button (Fig. 1). This is indicated by Block 30. Once the virtual trainer device is operational, the virtual trainer device can be  
5 programmed to indicate times to exercise periodically during the day. The programmed times can be set to be periodical, such as every thirty minutes, or can be time triggered, such as 12 o'clock. However, in the preferred embodiment, the  
10 virtual trainer device randomly selects times to exercise during the period of time that the virtual trainer device is in operation. See Block 31. A minimum time between random exercise periods is provided. This minimum period being at least fifteen  
15 minutes. In this manner, the virtual trainer device cannot randomly select consecutive exercise periods within fifteen minutes of each other. This provides the user of the virtual trainer device with a period to rest in between exercise sessions. Similarly, a  
20 maximum period between random exercise periods can also be used. This maximum period is preferably no longer than ninety minutes. In this way, the virtual trainer device will not randomly select consecutive exercise periods that are more than ninety minutes.

apart. This prevents any long period of inactivity to occur during the day. However, between the minimum period and the maximum period, a user of the virtual trainer device has no way of telling when a randomly selected exercise period will occur.

When an exercise period does randomly occur, the virtual trainer device produces a visual indication on the display 12 when it is time to exercise and/or produces an audible indication using the speaker 22 (Fig. 1). The step of indicating that it is time to exercise is shown in Block 32 of Fig. 2.

Since the timer to exercise is randomly selected, a person using the virtual trainer device has no way of predicting where they will be or what they will be doing when an exercise period occurs. For this reason, a user is provided with a selection of possible exercises so that the user can select the exercises best suited for their circumstances at that time. Once the virtual trainer device has indicated that it is time to exercise, a user can press the menu button 18 (Fig. 1) and select an operational mode using the directional buttons 20 (Fig. 1). The menu button 18 (Fig. 1) presents a



menu on the display (Fig. 1). Using the directional buttons 20 (Fig. 1), a user can select different options from the menu being displayed.

5           The user of the virtual trainer device is first prompted to select an operational mode for the device. The step of selecting different operational modes is shown in Block 34 in Fig. 2. The virtual trainer device has multiple modes depending upon the situation of the user. Among the modes present in  
10   the menu are the Stretching Mode 35, the Isometrics Mode 36, the Aerobics mode 37, the Anything Goes Mode 38, the Discreet Mode 39 and the Different Mode 40. Once a specific operational mode is selected, a user presses the GO button 16 (Fig. 1) on the  
15   virtual trainer device and programming dedicated to that mode is initiated, as is indicated by Block 42 and Block 44, respectively. During the running of the program for each mode, different exercises are displayed and demonstrated on the display 12 (Fig.  
20   1) of the virtual trainer device. Each mode presents a window of time in which to perform the displayed exercises. After every exercise period, the user is prompted to enter whether or not the displayed exercises were completed in the amount of time

suggested. This step is shown by Block 46. Depending upon the input of the user, the virtual trainer device provides a fitness report showing either improving or declining fitness, as is indicated by Block 48. The entire process is then repeated at the time of the next exercise period, as is indicated by Block 50.

#### Stretching Mode

One of the modes prompted is the Stretching Mode 35. If a user selects the Stretching mode 35, various stretching exercises are sequentially displayed on the display 12 (Fig. 1). In addition to the stretching exercise being displayed, a corresponding audible instruction may also be produced. For example, if the stretching exercise is touching one's toes, an audible instruction may announce "Grab your toes for five seconds -- four -- three ---two, and release." The audible commands provided are intended to mimic the commands provided by a personal trainer.

The Stretching mode is a relatively easy mode to perform. If a user selects one of the harder exercise modes, the Stretching mode may be the

initial default. In this manner, a person will be prompted to stretch prior to performing some of the more difficult exercises. As such, even if a person does not directly select the Stretching mode, the exercises of the Stretching mode may be prompted first as a precursor to another selected mode.

Isometrics mode.

The Isometric mode of the present invention virtual trainer device presents a user with a variety of isometric exercises. The exercises are slow and are designed to improve strength and limberness rather than to elevate heart rate. As such, the isometric exercises presented typically do not cause the user to break a sweat. This enables the exercises to be performed most anywhere, such as sitting at a desk, at work, sitting in a car and the like. The isometric exercises typically set one muscle group against another or against gravity. For example, an isometric exercise may be to push your hands together for thirty seconds. Another isometric exercise may be to hold you arm out straight for twenty seconds. The duration of the entire exercise mode, however, is very brief and typically lasts

between only twenty seconds and five minutes.

#### Aerobics Mode

5       The Aerobics mode of the present invention  
virtual trainer device presents a user with a  
variety of aerobic exercises that are intended to  
raise the heart rate and produce a sweat. The  
aerobic exercises elevate the heart rate and  
maintain the elevated heart rate for at least twenty  
10       minutes so as to create increased cardiac benefits  
and caloric reduction from the exercise. Aerobic  
exercise may include running in place, jumping  
jacks, skipping rope and the like. The exercises are  
shown on the display 12 (Fig. 1). Audible commands  
15       are given to help a user stay on pace. For example,  
during jumping jacks, the virtual trainer device can  
call out the pace count "One, two, three, four.  
Again, one, two, three, four." Inspirational audible  
comments, such as "up higher" or " only ten more  
20       times" can be periodically produced when  
appropriate. Again the purpose of the audible  
commands is to mimic the commands of a personal  
trainer.

### Anything Goes Mode

5       The Anything Goes mode of the present invention  
virtual trainer device presents a user with a wide  
variety of difficult exercises that assumes the user  
does not have space constraints. For example, the  
virtual trainer device may prompt a user to run as  
fast as he/she can for twenty seconds. The virtual  
trainer device counts down the twenty seconds aloud.  
Alternately, the virtual trainer device can prompt a  
10   user to do ten push-ups, ten sit-ups or the like.  
Like with other modes, the virtual trainer device  
can produce encouraging remarks while the exercises  
are being performed. The duration of the anything  
goes mode is short and is preferably between thirty  
15   seconds and five minutes.

### Discreet Mode

20       The Discreet mode of the present invention  
virtual trainer device presents a user with a  
variety of exercises that can be done discreetly in  
crowded public places such as a theater or on a bus.  
The exercises mostly involve muscle crunches where  
various muscles groups are contracted for specified  
periods of time. During operations in the Discreet

mode, the audible signals produced by the virtual  
trainer device are kept to a minimum, so as to be  
discreet and not to be perceivable by others that  
may surround the user. The duration of the Discreet  
5 mode is short and is preferably between thirty  
seconds and five minutes.

#### Different Mode

The Different mode of the present invention  
10 virtual trainer device presents a user with a  
variety of exercises that are intended to exercise  
some of the minor muscle groups that are neglected  
by typical exercises. For example, when in the  
Different mode, the virtual trainer device may  
15 prompt a user to make faces to exercise the muscles  
in the face. The virtual trainer device may prompt a  
user to sing aloud to exercise the muscles that  
control the larynx. The duration of the Different  
mode is short and is preferably between thirty  
20 seconds and five minutes.

After a particular mode of exercise is  
complete, a user is prompted to enter the results of  
the exercise routine into the virtual trainer

device. This is indicated by Block 46 in Fig. 2. The virtual trainer device prompts the user as to whether or not the exercises were complete and whether or not the completed exercises were completed in the allotted time. Once the results of the exercises are entered, the virtual trainer device provides a fitness report, as in indicated by Block 48. The fitness report can indicate several aspects of fitness, including calories burned, muscle groups exercised and the like.

As is indicated by Block 48 in Fig. 2, the user of the virtual trainer device is provided with a health report after each exercise period.

Preferably, the health report is a graphical depiction of the users body. Referring to Fig. 3, it can be seen that the virtual trainer device also provides a graphical depiction 52 of the person's fitness. At the beginning of the day, the person's health is depicted as a body in poor health. The body can be emaciated, obese, old or in any other way shown not to be in the prime of health. As a person successfully performs the exercises prompted by the virtual trainer device, the health of the graphical depiction 52 improves. If a person

successfully performs a full days worth of  
exercises, the graphical depiction is shown in  
perfect health with the body of a superhero.

However, if exercises are not completed or are  
5 skipped, the graphical depiction 52 becomes less  
muscular. The graphical depiction 52 is accompanied  
by either praising or astonishing audible statements  
selected to congratulate successful exercise  
regimens and embarrass unsuccessful exercise  
10 routines.

Returning to Fig. 2, it can be seen that after  
the step of presenting the fitness report (Block  
48), the virtual trainer device waits for the next  
random exercise period (Block 50). Depending upon  
15 the cycle time between exercise modes and the  
exercise modes selected, the total time spent  
exercising in an average day preferably ranges from  
between ten minutes to two hours.

Since the present invention virtual trainer  
20 device tells a person when to exercise, instructs  
the users as to what exercises to perform,  
illustrates the exercises, times the exercises,  
provides audible encouragement during the exercise  
and monitors the completion of the exercises, the



device serves the same function as a personal trainer. However, since the device is electronic in nature, the device serves as a virtual trainer.

5 After having completed various exercise modes in a particular day, the virtual trainer device can calculate how many calories have been burned. Using the menu button 18 (Fig. 1) a person can access a display menu that contains a heading for diet and a heading for lifestyle. By selecting the diet  
10 heading, a user is prompted to enter all food and drink that has been consumed in the day. The entering of food and drink can be done using the direction buttons 20 (Fig. 1) and providing a selection list of various foods, drinks and  
15 quantities.

Referring to Fig. 4, it can be seen that once the virtual trainer device has the total caloric intake for a day (Block 54), the virtual trainer device can compare that caloric intake to the total  
20 calories burned by exercise and metabolism during that same day (Block 56). The virtual trainer device can then calculate net weight gain or net weight loss for the day (Block 58). This information can be displayed as part of the fitness report. See Block

48, Fig. 2.

By utilizing the present invention virtual  
trainer device, a person is prompted to begin an  
exercise routine. The exercises are spread out over  
5 the course of the day in short periods of time that  
typically last less than five minutes. As a result,  
the present invention virtual trainer device  
motivates people to exercise at work, while  
commuting, and while at home without requiring a  
10 large commitment of time. The virtual trainer device  
can also motivate people to control their caloric  
intake or balance their caloric intake with  
exercise. In this manner, people can better monitor  
and control their weight.

15 In the embodiment of Fig. 1, the exemplary  
embodiment of the present invention virtual trainer  
device is square. Such a shape is merely exemplary.  
The housing of the virtual trainer device can be  
manufactured into most any shape, such as a  
20 dumbbell, a ball or a corporate trademark.

The operation of the present invention virtual  
trainer device is software driven. As such, the  
manner and images used to select and display the  
various exercises are as boundless as the

imagination of the programmer. Regardless of how the program is written, the program contains the following key features. The program presents a variety of different types of exercise modes that are appropriate for different situations. The exercises should be varied, wherein some of the exercise modes contain exercises that are hard and some of the exercise modes contain exercises that are easy. The program should instruct a user as to how to perform the various exercises and should present a time frame in which those exercises should be performed.

One optional aspect of the operational program is the ability to provide audible signals and commands to motivate the completion of the exercises. Another optional aspect of the operational program is to provide a fitness report. Yet another optional aspect of the present invention is the selective comparison between calories burned and caloric intake for the purposes of monitoring weight.

It will also be understood that the embodiment of the present invention virtual trainer device and method that are described and illustrated herein are

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merely exemplary and a person skilled in the art can make many variations to the single exemplary embodiment shown without departing from the scope of the present invention. All variations, modifications and alternate embodiments to these structures that serve the stated function are intended to be included within the scope of the present invention as defined by the appended claims.